CLAIMS

1. An electronic control unit for controlling an ignition timing of an internal-combustion engine, the electronic control unit being programmed to:

calculate an ignition timing value of the engine by using a first correction term calculated based on a controlled variable without reflecting a desired value and a second correction term calculated based on a difference between said controlled variable and said desired value.

2. The electronic control unit as claimed in claim 1 wherein the first correction term is a proportional term and the second correction term is an integral term.

3. The electronic control unit as claimed in claim 2, further comprising a detector for detecting a rotational speed of the engine, said rotational speed being the controlled variable and the desired value being a target rotational speed.

4. The electronic control unit as claimed in claim 3, wherein a coefficient of the first correction term and a coefficient of the second correction term are given respective values in accordance with conditions of the engine.

5. The electronic control unit as claimed in claim 2, wherein the electronic control unit is configured to compare an ignition timing value obtained by a feed-forward operation based on conditions of the engine and another ignition timing value obtained by thee use of the correction terms, and to use the smaller timing value for controlling the ignition timing of the engine.

6. The electronic control unit as claimed in claim 5 wherein the value of the ignition timing that is obtained by the use of the correction terms is used for controlling the ignition timing immediately after the engine starts.

7. An electronic control system for controlling an ignition timing of an internal-combustion engine, comprising:

means for calculating an ignition timing value of the engine by using a first correction term calculated based on a controlled variable without reflecting a desired value and a second correction term calculated based on a difference between said controlled variable and said desired value.

8. The electronic control system as claimed in claim 7 wherein the first correction term is a proportional term and the second correction term is an integral term.

9. The electronic control system as claimed in claim 8, further comprising detection means for detecting a rotational speed of the engine, said rotational speed being the controlled variable and the desired value being a target rotational speed.

10. The electronic control system as claimed in claim 9, wherein a coefficient of the first correction term and a coefficient of the second correction term are given respective values in accordance with conditions of the engine.

11. The electronic control system as claimed in claim 8, further comprising:

means for comparing an ignition timing value obtained by a feed-forward operation based on conditions of the engine and another ignition timing value obtained through use of the correction terms; and

means for using the smaller timing value for controlling the ignition timing of the engine.

12. The electronic control system as claimed in claim 11, wherein the value of the ignition timing obtained by the use of the correction terms is used for controlling the ignition timing immediately after the engine starts.

13. A method for controlling an ignition timing of an internal-combustion engine, comprising:

calculating an ignition timing value of the engine by using a first correction term calculated based on a controlled variable without reflecting a desired value and a second correction term calculated based on a difference between said controlled variable and said desired value.

14. The method as claimed in claim 13, wherein the first correction term is a proportional term and the second correction term is an integral term.

15. The method as claimed in claim 14, further comprising:

detecting a rotational speed of the engine, said rotational speed being the controlled variable and the desired value being a target rotational speed.

16. The method as claimed in claim 15, wherein a coefficient of the first correction term and a coefficient of the second correction term are given respective values in accordance with conditions of the engine.

17. The method as claimed in claim 14, further comprising:

comparing an ignition timing value obtained by a feed-forward operation based on conditions of the engine and another ignition timing value obtained by the use of the correction terms; and

using the smaller timing value for controlling the ignition timing of the engine.

18. The method as claimed in claim 17, wherein the value of the ignition timing obtained by the use of the correction terms is used for controlling the ignition timing immediately after the engine starts.

19. A computer readable medium comprising a computer program which is configured to cause a processor to execute a function of controlling an ignition timing of an internal-combustion engine, said program comprising:

a computer program code for calculating an ignition timing value of the engine by using a first correction term calculated based on a controlled variable without reflecting a desired value and a second correction term calculated based on a difference between said controlled variable and said desired value.

20. The medium as claimed in claim 19, wherein the first correction term is a proportional term and the second correction term is an integral term.

21. The medium as claimed in claim 20, wherein the controlled variable being a rotational speed of the engine that is detected by a detector and the desired value is a target rotational speed.

22. The medium as claimed in claim 21, wherein a coefficient of the first correction term and a coefficient of the second correction term are given

respective values in accordance with conditions of the engine.

23. The medium as claimed in claim 20, wherein the computer program further comprises:

a computer program code for comparing an ignition timing value obtained by a feed-forward operation based on conditions of the engine and another ignition timing value obtained by the use of the correction terms; and

a computer program code for using the smaller value for controlling the ignition timing of the engine.

24. The medium as claimed in claim 23, wherein the computer program uses the value of the ignition timing obtained by the use of the correction terms for controlling the ignition timing immediately after the engine starts.